

Pressure Cabins

YET another direction in which we in this country have failed to progress as we should have done is in the matter of airtight cabins. It is still open to a certain amount of doubt whether or not so-called "stratosphere" flying is likely to be worth while. But quite apart from that, the time may very well come, and quite soon, when passengers in commercial aircraft will demand to be protected against the painful effects of fairly rapid changes of altitude. Already on the American sleeper service from Atlantic to Pacific coasts passengers are complaining that they wake up in their berths with pains in the ears. Of little use to provide luxurious sleeping accommodation and to exclude all noise from the cabin if eardrums are going to be distressed by changes in pressure. Thus the airtight cabin in which a constant pressure is maintained may be forced upon us long before stratosphere flying comes to be generally adopted.

Diesel Engines

WITH the introduction of 100-octane fuels, the diesel aero engine is probably of very limited use for a military aircraft, being applicable to long-range bombers only; but this type of power unit undoubtedly has its application in civil aviation, and other countries, notably Germany, are paying a great deal of attention to its development. In this country we have allowed ourselves to drift away from the diesel, owing to lack of Government support, though shortly a British civil aircraft will take the air with four Jumo diesels to let our people get some experience.

It may be argued that this is cheaper than to finance a sustained effort of our own, but it is always the case that the man who copies is one jump behind the man who originates, and one of these days we shall wake up to find that Germany has evolved a diesel aero engine which, on a fuel much cheaper than petrol, does nearly all that the petrol engine does and for very little more weight. (The pressures reached in the modern petrol engine are getting very high.) It is not a matter which individual enterprise can tackle, and it is for the Air Ministry to see that diesel work is resumed and energetically pursued.

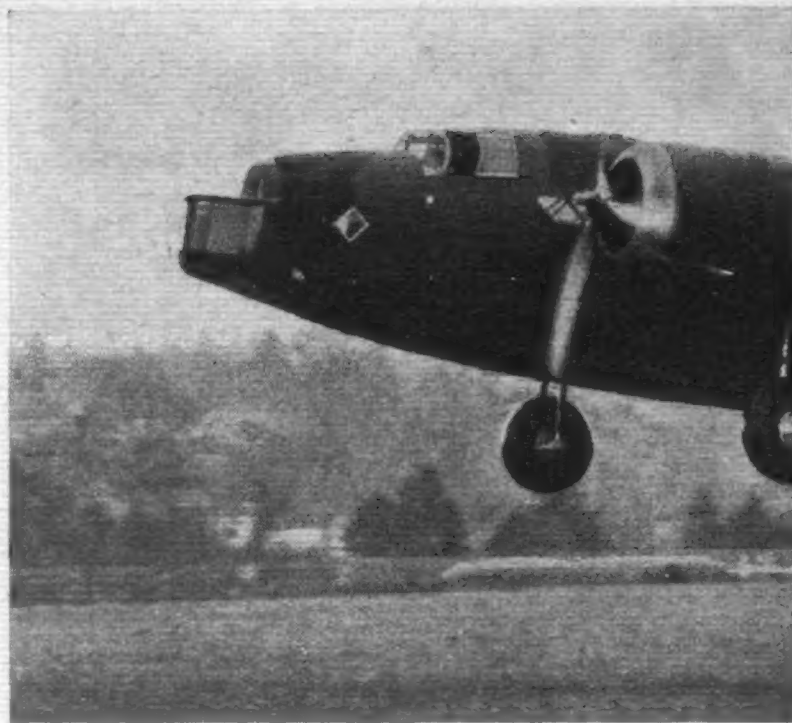
Marshals All

IN the commissioned ranks of the R.A.F. the expansion scheme has resulted in the apparent disappearance (if this contradictory expression may be permitted) of flight lieutenants and flying officers, and in the multiplication of pilot officers and air vice-marshals.

Excluding the Royal Dukes and unemployed marshals of the Royal Air Force, the *Air Force List* of January, 1934, showed fifteen officers of the rank of air vice-marshal and upwards. In those days a marshal, whether vice, simple or chief, was a rarity, and, as such, to be gazed upon with awe.

The half-yearly promotions dated last Saturday are headed by four new air vice-marshals, which brings the marshaled ranks up to a total of thirty. No doubt they are all needed to deal with the great numbers of officers, men and machines now pouring into the Force. One notices, too, that selection for promotion and not mere seniority is now, as always, a very active principle in the Air Force. The four new dignitaries ranked ninth, tenth, eleventh and thirteenth in the list of air commodores, and, therefore, must be officially considered very able officers. They are to be congratulated on their selection, and we are sure that the nine air commodores who probably hoped for promotion on New Year's Day will be the first to offer their congratulations.

To be a *vara avis* confers a dignity, while to be one of a mob of grandees must necessarily dash some of the splendour. Air vice-marshals have not yet descended to the position of silver in the days of King Solomon, which "was nothing accounted of," nor have we yet attained that Utopia whereof Gilbert wrote that "when everyone is somebody, then no one's anybody." Air marshals of all degrees can console themselves by the reflection that they are not yet quite so numerous as are flight lieutenants.



DUCAL DIGNITY : The first production-type Vickers Wellington I me Pegasus XVII radials with two-speed blowers. The transparency of the fine lines of the fuselage which, incidentally,

Bombing the Bomber

MR. MACLANACHAN, the author of *Fighter Pilot*, makes an interesting though not entirely novel suggestion in the article published on page 19. In the event of another war, one of our greatest problems will be to inflict casualties on enemy bombers which come over to raid our cities. By day a bomber formation with its crossfire of machine-guns is a tough nut to crack, though if the formation can be broken up our fighters can be trusted to deal adequately with the individual enemy machines. Anti-aircraft guns may disturb the formation, but Mr. MacLanachan suggests that an even better way to bring this about would be to bomb the enemy from above. A direct hit would not be necessary (though, of course, desirable); a burst within a hundred yards would, he says, be enough to make the stoutest bomber pilot swerve from his course.

Practical Points

THIS plan depends upon the use of time fuses in the bombs, and in fairly accurate estimation by the defending pilots of their height above the bombers. After a few sighting shots the defenders ought to be able to get the range right and alter their altitude accordingly. But it must be remembered that the greater the height from which the bombing is made, the greater the difficulty of ensuring accuracy. Mr. MacLanachan suggests (though not with any certainty) that 1,000ft. would be a useful height, and one that would keep the defenders outside the effective range of the raiders' machine-guns. But if the bombers carried "cannons," the effective range might well be as much as 1,000ft., and the defenders, who would have to fly on a level course, might suffer casualties, too. It would be impossible to foretell which side would suffer most.

In all fighting risks must be run, and all the defending pilots will cheerfully face risks in the defence of their homeland. The object must be to inflict casualties which will be deterrent while not suffering any crippling losses oneself. If time-fused bombs help our fighters to destroy the raiders, this form of attack will be worth while; provided only that it did not cost us so many Blenheims